

ON THE
TREATMENT
OF
PULMONARY CONSUMPTION

BY
HYGIENE, CLIMATE, AND MEDICINE.

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HÔPITAUX DE PARIS).



LONDON:
JOHN CHURCHILL & SONS, NEW BURLINGTON STREET.

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ON THE

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CHAPTER I.

ON THE CAUSE AND NATURE OF PULMONARY PHTHISIS.

So much has been written during the last twenty years on pulmonary consumption by men of the highest order of intellect, that it requires a certain amount of moral courage to enter the arena. No one, indeed, would be justified in so doing unless he conscientiously thought that he had information to impart calculated to be of use to his fellow-practitioners and to humanity at large. It is because I believe that such is really my case that I have written the present essay.

I have little that is new to bring forward—at least that is new to those who keep pace with the progress of Medicine; but I have important testimony to give in favour of modern science. One who, like myself, has been thirty-two years in the profession, belongs both to the past and to the present, and is able to speak from personal experience of the views and opinions of former days as well as of those of the present time. This fact should give weight to the judgment of an author, who certainly does not appear in the character which, according to the Latin poet, characterizes the later periods of life—that of a “*laudator temporis acti*.”

I may, perhaps, lay claim to having had peculiar and ex-

ceptional opportunities for forming an opinion respecting the value of the treatment of pulmonary consumption pursued thirty years ago as compared with that now adopted by the leading authorities at home and abroad. My medical education was carried out partly in England, partly in Paris. During four years I was resident medical officer to several of the Paris hospitals, and there gave clinical lectures on auscultation (not then as generally studied as it is now) and on diseases of the heart and lungs to several hundred young English and American medical men. Thus I became thoroughly imbued with the knowledge of the day, and may add, that I have ever since remained much interested in thoracic pathology. Later in life, after practising many years in London, I became myself affected with pulmonary consumption, and, seven years ago, had to abandon everything in order to go and die, as I thought, on the shores of the Mediterranean. Relieved from the fatigue, the harass, and the cares of our arduous profession, I have managed, by the application of modern science, to save my own life, and since then I have helped to save the lives of many similarly affected who have followed me in my health-exile to the south.

The great fact to which I have to testify is, that pulmonary consumption is a curable disease—indeed, in its early stages, often a very curable disease—under proper treatment. In making this assertion, I have merely to enlarge, and to confirm by matured knowledge, an unpublished paper written in 1840, entitled “On the Curability of Consumption,” which I recently found among my manuscripts. At that date I had just passed a year as one of the resident medical officers of the Salpêtrière, a large asylum hospital in Paris, more especially devoted to aged and infirm women. There I had found in the dead room, in the lungs of women who had died in advanced life from other diseases, large cretaceous deposits and puckered cartilaginous cicatrices, which proved, emphatically, undeniably, that they

had been consumptive at some antecedent period of their life, but had got well, spontaneously no doubt, dying at last of other disease. Indeed, in those days, the real treatment of phthisis was so little understood by the generality of practitioners, that I truly believe a sufferer had a better chance of recovery if the disease was not discovered than if it was. The low diet, the confinement, the opiates and fever medicines, the leeches and blisters, which constituted the usual therapeutics of such cases, were certainly but little calculated to arrest a disease the essence of which is organic debility. The inhabitants of the Salpêtrière are mostly aged women belonging to the lower classes, and the pathological conditions observed were undeniable evidence of their having recovered from an advanced stage of consumption, at some period or other of their life, apparently through the unaided resources of their constitution. Possibly, feeling ill and weak, they had taken refuge with their relations or friends in the country, and had gradually recovered under the mere influence of improved hygienic conditions.

In the year 1840, when I became aware from these pathological facts that pulmonary phthisis is spontaneously curable, it was considered by most of the physicians with whom I had come in contact to be all but inevitably fatal, especially when advanced to its second stage—that of softening. Since then, the same pathological evidences of the spontaneous cure of phthisis have, I believe, been found by all, or nearly all, who have had special opportunity of making post-mortem observations in the aged. Among these observers I may more especially mention my namesake, Professor Bennett of Edinburgh, whose luminous work on Pulmonary Consumption, first published in 1852, has much contributed to improve our knowledge of this disease, and of its hygienic management. Moreover, a more rational treatment, founded on a truer appreciation of the nature of the disease, has proved that in the

living, in many cases, when recognised before the lungs are so diseased as to be unable to discharge their physiological functions, this malady is capable of arrest, and even of cure. This I may safely assert is the opinion of all practitioners, at home and abroad, whose attention has been specially directed to the subject, and who have had sufficient opportunities for observation to give importance to their views. There are very many, however, who still look upon pulmonary phthisis as incurable or all but incurable, and it is for them more especially that I write.

Pulmonary consumption was formerly considered by most pathologists to be merely a disease of the lungs, having, generally speaking, some intimate connexion with inflammation and with inflammatory states. This view has now been generally abandoned, and the most enlightened observers in all countries recognise the fact that this dire malady, by which a considerable portion of the human race pass into eternity, is the result of defective nutrition, a disease of the blood. According to this view, undoubtedly the correct one, the exudation or deposit of tubercular matter in the lungs, and the ravages which it therein causes until it destroys life, are merely the epiphenomena, the secondary results of a constitutional disease, of a morbid general diathesis which precedes, occasions, and rules the tubercular manifestation. Given the tubercular diathesis, the deposit of tubercular matter may take place in any organ, in any part of the body, and there pass through its various stages, but the lungs are its seat of predilection, in adults.

In the investigation of the nature and causes of pulmonary consumption, and of tubercular disease in general, we may perhaps go a step further. I firmly believe that the appearance of tubercular deposit ought to be looked upon as the evidence and result of a serious, perhaps final, diminution of vital or nervous energy. In other words, it may be considered

the evidence of incipient decay of the organization from defective vital or nervous power. Thus, tuberculization, especially when seated in the lungs, is simply a mode of dying. Unless the vitality of the individual can be roused, the morbid condition will surely progress, and life will be extinguished sooner or later, according to the state of the constitution of the patient, and to the consequent type of the disease.

The very essence of life is the organic vitality, variable in different species, variable in different individuals, with which each organism, vegetable or animal, merges into being and develops itself. It is owing to inherent organic vitality that the medium duration of life in the oak, the ash, the fir, is different, as it is also different in the whale, the elephant, the horse, the dog, and in man himself. The medium duration of life in each species is reached in the organisms that are created under favourable conditions, with unimpaired organic vitality, and that pursue their existence under conditions favourable to life. On the other hand, this medium duration is not reached by those individuals that are created under unfavourable conditions, with defective vitality, or in whom originally sound vitality is modified, diminished, destroyed by the unfavourable conditions in which their existence is carried on.

In such considerations, in my opinion, must we seek for the real explanation of tubercular disease, and especially of pulmonary tuberculization; as also for a key to the types under which the disease presents itself and to the results of treatment. They include, of course, hereditary predisposition.

Viewed in this light, so far from pulmonary consumption being a dire inexplicable pestilence striking indiscriminately the young and the old, it becomes one of the provisions by which Providence has secured the integrity of the human race. If those who are, from birth or otherwise, sickly or weak, in whom vitality is defective originally, or secondarily and accidentally, could propagate their kind so that their progeny

could live, the human race would soon degenerate and become a race of pigmies, of sickly dwarfs, and eventually die out. Pulmonary tuberculization is in reality one of the diseases by which Providence eliminates those that are weak, imperfect, and consequently unfit to perpetuate the race in its integrity. Individually it may be very hard to be thus eliminated for the good of the human race; but if we rise above individuals and grasp the interests and well-being of the entire human family, it will be seen that these diseases are, in truth, a bountiful dispensation of Providence. They may be compared to hurricanes in tropical climates, which purify the earth and contribute to make it habitable, although often at the expense of great individual suffering.

A man or woman who is old, who has inherited disease, who labours under disease, or has become weakened by disease, by privation, by cares—parents, in a word, in whom organic vitality is weakened,—cannot give strong or even medium vitality to their progeny. No one can give to others what he does not possess himself. It is the same with plants. The seeds of a young vigorous plant produce healthy vigorous plants; whereas the seeds of old, weak, sickly plants produce a like progeny.

The human, like the vegetable, progeny, may at first be fair to look at—may appear sound and vigorous; but this state does not last. It is a mere deception; for the inherent, the inherited, vitality is defective. Such beings are like bad watches made with bad works. They may look well, and go well for a time; but they soon wear out, go badly, and, if patched up again, get out of order, and finally stop. The good watch, on the contrary, made with good works, will go a hundred years; or, if it accidentally gets out of order, it will go as well as ever when once it has been set to rights. Thus is explained death by consumption at the age of fifteen, twenty, thirty, of young people born with defective vitality,

even when brought up and living in favourable conditions for life, and apparently healthy and vigorous. They have thus early exhausted the amount of vitality which they received from their parents; they have used to the last shred their constitutional powers, and decay commencing in the shape of pulmonary tuberculization, closes their earthly career, unless their vitality can be roused by rational treatment.

Those who are fortunately born with a fair amount of organic power, their progenitors being young and healthy, may damage it as they advance in life. Unfavourable hygienic conditions, accidents, cares, the thousand incidents of the struggle of life, may impair their originally good constitution, and diminish or even crush their vitality. When such is the case, death may come in a hundred ways, through the attacks of a hundred diseases; but one of the most common modes of decay, especially in towns, is pulmonary consumption. In town life the supply of atmospheric air is generally deficient, and this, I am convinced, is one of the most efficient immediate causes of phthisis.

In both cases—whether pulmonary consumption attacks persons deficient in inherited organic vitality, or whether it attacks those in whom originally sound vitality has been accidentally diminished by the wear and tear of life—it is in reality a secondary element. It is not the real disease, but a symptom of it. The real disease is exhausted or lowered vitality. Thus when a tree in a forest or plantation is attacked by insects, fungi, and parasites of all kinds, they are only *apparently* the cause of its decay and death. The young, vigorous, healthy tree resists their attack through its high vitality; full of life, it fears no such enemies. If they attack its less fortunate companion, it is because the latter is already sickly, diseased. The true remedy is not merely to scrape away the moss and to kill the parasites, for others will come; but to remove all causes of ill-health and decay: in a word, to rouse

the vitality of the tree by trenching and draining the soil, by putting good loam round its roots, and by protecting it from all injurious influences. Thus only can we hope to succeed in arresting the decay. If we are successful, the tree will itself gradually shake off its enemies, and may even eventually be restored to pristine vigour and beauty.

Such, I believe, should be the treatment of pulmonary consumption. There is no panacea whatever for a disease which is merely a symptom of lowered vitality, of positive decay. But much may be done towards arresting the progress of this decay, and even towards effecting a cure, by the combined influence of hygiene, of climate, and of rational medical treatment. These are the three modes of treatment which I mean to discuss, and that in the order given—the order of their relative importance.

CHAPTER II.

HYGIENE.

IF, as I have stated, the deposit or exudation of tubercle in the tissues, which in the lungs constitutes phthisis, is the result of defective nutrition, consequent on defective vitality, inherited or acquired, the rules for treatment become self-evident—they must be found principally in the strict observance of the laws of hygiene. In most cases of this disease it will be discovered, on careful inquiry, that these rules have been grossly infringed. The laws of hygiene may be considered to embody the conditions, bodily, social, and mental, which are the most favourable to the healthy development of the human economy, the most conducive to its well-being. These conditions have only been clearly elucidated by modern research, and are daily ignored and infringed by the immense majority of the human race—with comparative impunity by the strong, the vigorously constituted, but not so by the weak, by those who are born with defective vitality, or are living in unhygienic conditions. In both cases existences which, although weak, might have reached the ordinary term of human life under favourable conditions, are prematurely brought to a close.

Bodily hygiene includes, principally, good and abundant food, pure air, a clean skin, and exercise. Theoretically, the injunction to scrupulously attend to these points seems so rational in a disease of debility that it appears scarcely necessary to lay stress upon them ; but practically it is not so. A large pro-

portion of the medical profession, instead of looking upon the progressive deposit of tubercle in the lung, with its gradual softening, upon the hæmorrhages, and the bronchial and laryngeal affections which it occasions or which precede it, as mere local symptoms of a general diathesis, have their attention arrested by the local condition. They exaggerate its inflammatory nature, and dare not apply to their patients the ordinary rules of hygiene; they dare not give wine and plenty of animal food; they dare not give fresh, cool air day and night; and they dare not keep the skin clean and cool by cold or tepid sponging. Yet this timidity is a fatal mistake, for these are the principal means by which nutrition is to be improved and restored to a normal condition, and consequently by which the disease is to be arrested and cured.

The food taken by consumptive patients should be of the most nourishing kind—meat, fish, fowl, eggs, milk, bread,—well cooked, and abundant in quantity. Indeed, the quantity of food taken should merely be limited by their digestive powers. In my opinion, the principal value of medical treatment in phthisis is in the restoration of digestive tone when impaired or absent. If patients can be brought to eat, to digest, and to assimilate, they have a chance of recovery. If they cannot, their chance is indeed slight.

The medical attendant, however, must never forget the important fact which I developed at length in my work on “Nutrition in Health and Disease,” published in 1856—viz., that there are two great types of digestive power, the quick and the slow. In many persons, in most indeed, the digestive process is rapid. Such individuals require food often—three, four, or more times in the twenty-four hours, and in that period they can take and digest animal food two or three times. If they have not frequent meals they feel faint and ill. The other class digest more slowly, more laboriously. They can only take food, with advantage and comfort to themselves,

twice, or at the most three times, in the twenty-four hours, and only one meal must be a meat meal. Such individuals become dyspeptic if they try to assume the habits of those who require more frequent meals. The real remedy for their dyspepsia is not physic, but the adoption of a dietary more suited to their constitution. These peculiarities remain in disease, and must be attended to if the patient is to do well. There is no rule but the patient's own individual constitution. It is worthy of remark that the people who make two or three meals only, evidently get more out of their food than those with quicker digestions, and consequently thrive on less food.

A moderate amount of wine, as a tonic and gentle stimulant to digestion, I consider beneficial—say six or eight ounces; that is, three or four glasses of claret, burgundy, hock, or two of sherry, taken with meals, and diluted with water; or a glass or two of bitter beer if the stomach can bear it. Of late years, in America, whisky has been much lauded as a cure for consumption, on what rational ground I am really at a loss to conceive. I have seen a certain number of cases in which it had been long taken, but I cannot say with benefit. The daily ingestion of large quantities of nerve-stimulating spirit certainly does not come under my notion of hygienic treatment. Carbonaceous food can be given to all but any extent in a more natural and less pernicious form.

The above dietary may be insisted on, within the limits of reason, under all and every condition of the lung, with tubercular softening or without, with fever or without, with local inflammatory complications or without. We must try to struggle through unfavourable stages and complications without letting down nutrition.

I last year stated in the *Lancet* that I find many of the females whom I attend in the south each winter to be suffering from uterine disease, and that, through the usual morbid reaction of the uterus on the stomach, they have no appetite, are

tormented with nausea, and cannot eat. They all perish if I am not able in time to remove the uterine malady, and thus to restore the tone of the stomach, the natural desire for food, and the power of eating and digesting. Sometimes even when this has been accomplished, and they can eat and digest, it is too late. The disease has progressed too far, the lung is all but gone, has become a mere shell, and the patient sinks a victim sooner to uterine disease than to consumption, the apparent cause of death.

It seems also, at first sight, as superfluous to state that in a disease of debility like pulmonary consumption patients should breathe pure air as that they should live on nourishing food; but it is not so. Theoretically the value of pure air—of atmospheric food—is universally accepted by the medical profession; practically it is all but universally neglected. The physiology of respiration—a modern discovery—has yet to be applied, not only in every-day life, but even in the treatment of disease. Most medical men as well as their patients ignore the all-important fact that the demands of respiration are so great that one or two human beings soon use up and contaminate the air contained in a good-sized room. Such being undeniably the case, unless it be renewed artificially, or by an open window or door, in other words, unless the air in an inhabited room be constantly undergoing change, impure air is breathed—air calculated to produce disease even in the healthy, and to increase it in the sick. So universal is the neglect of this fundamental law of health, that the healthy persons who do not sleep in rooms with the windows, doors, and register stoves shut, and who do not thereby poison their blood all night with their own excreta, are as yet the exception.

In ill health, and especially in diseases of the respiratory organs, the dictates of science and of common sense are still more grossly outraged. At a time when, perhaps, the principal food the economy can take is pure air; when the diseased

lungs, partly inefficient, require the purest and best air-food that can be afforded them, the doors and windows are generally kept shut on pretence of chills, cold air, and draughts, a due supply of respirable air being thus refused to the unfortunate patient.

In my younger days this fatal and cruel error was carried to an insane extent by many medical practitioners, as it still is in most parts of the continent, and especially in Germany. The windows were often hermetically shut, and paper pasted over the chinks. The doors were made double, and one always shut before the other was opened. The healthy friends of the patient considered it a penance and a trial to have to remain in the polluted atmosphere "necessary" for the miserable sufferer, and often paid for their devotion by the loss of their own lives. On the other hand, the wretched patients suffered from constant suffocation as well as from a steady aggravation of the symptoms of the disease. This suffocation, the mere result of want of pure air, was called dyspnœa, and treated by opiates and sedatives instead of by opening the windows.

All my consumptive patients, whatever the stage of the disease, live night and day in a pure atmosphere, obtained by allowing a current of air to pass constantly through the room, either by a more or less open window and open fireplace, or by a door opening on a well-ventilated staircase, if the weather does not admit of the window being even slightly open. Rational, reasonable ventilation is not encompassed, however, without trouble and discrimination for human beings any more than for plants, although it is to be accomplished. Since I have been an invalid I have devoted much time and study to horticulture, and have had former convictions as to the necessity of efficient ventilation thereby confirmed. Plants under glass, too crowded and not well ventilated, soon sicken, wither, and die. To well ventilate them, enough and not too much, requires constant trouble, attention, and good sense on

the part of the gardener ; in a word, exercise of both judgment and discrimination.

Consumptive patients bear ventilating perfectly well, as well as healthy people, day and night. They neither get pleurisy nor pneumonia, nor are their coughs aggravated by breathing pure cool atmospheric air night and day ; whereas all these evils pursue those who are shut up, as are the numerous continental patients whom I see in consultation with their own doctors every winter at Mentone. Moreover, suffocation, medically called dyspnœa, is all but unknown, even in the latter stages of the disease, to those who are allowed plenty of fresh cool air. It soon comes on, however, if the window is shut and the room becomes close. These persons, accustomed to free ventilation, *will* have more air ; indeed, I often stand aghast at the amount of ventilation such patients, previously freed by me from groundless fears, insist on having. All who have damaged lung-tissue, unless accustomed by long habit to a close atmosphere, feel more or less oppression in a confined atmosphere, owing to the diminished field of their respiration. A concert-room, a theatre, a close chamber at night, bring on dyspnœa all but immediately. This I have learnt from personal experience, and thus most fully can I sympathize with my patients. I fully admit, however, that free ventilation without dangerous draughts is difficult to attain, and that it is much more easily and safely accomplished in a southern than in a northern climate.

Before I leave this subject I would draw attention to the physiological fact that the lungs are made to breathe cold as well as warm air—indeed, air of any temperature from zero to 100° Fahr., just as the face is made to bear exposure to the external atmosphere. How could the lungs be protected, if they required protection, which they do not ? Domestic animals that live out in the open air winter and summer are freer from colds than those that live in warm stables ; and

men who are much exposed, and constantly breathe air at a low temperature, are less liable to colds and influenza than those who live constantly in warm rooms. All who have horses are aware that to keep a stable warm is the surest way for the inmates to suffer from constant colds.

I may mention two facts that aptly illustrate the evils of defective ventilation. Some years ago I was riding in the Highlands of Scotland with a local proprietor, when we came upon a village of well-built stone houses with slate roofs, which strongly contrasted with the miserable shanties or hovels generally met with. On my complimenting him on his rebuilt village, he told me that he had acted for the best in erecting these good weather-proof houses for his tenants, but that, singular to relate, they had proved more unhealthy than the miserable dwellings which their occupants previously inhabited. Fever and other diseases were rife among them. On close examination, I found that the windows were fastened, and never opened, and I have no doubt that their comparative unhealthiness was in reality owing to their being quite weather-tight, and consequently unventilated. In the miserable hovels they previously inhabited, if the rain of heaven came in, so did pure air.

The other fact is narrated by Professor Hind in a recent interesting work on Labrador. Consumption appears to be all but unknown to the natives living wild in the fastnesses of this desolate region, in tents made of spruce branches imperfectly lined with skins, and more or less open on all sides to the external air, although they are exposed to famine and every species of hardship. But when these same natives come down to the St. Lawrence to take a part in the fisheries, occupy well-built houses, and, being well paid, live in comparative luxury, most of them in the course of a year or two become consumptive and die miserably. I am fully impressed with the idea that the development of the disease under these

circumstances is principally the result of their living in closed houses in a vitiated atmosphere, as it no doubt is in our own towns.

Attention to the functions of the skin is, I consider, next in importance to attention to food and air—that is, to digestion and to respiratory nutrition. The skin has very important eliminatory functions to perform. It is by excretion through its pores that the economy partly throws off the effete or used-up carbonaceous and nitrogenous elements of the system. This is illustrated by the strong odour of the cutaneous secretion when not washed off. Moreover, the skin and the lungs seem to partly replace each other in this work of excretory purification. In warm summer weather the skin and liver act freely, and the lungs and kidneys are comparatively at rest. In the cold damp weather of winter the pores of the skin are closed, and it rests, the lungs and the kidneys taking up the excretory process. Thence, probably, the feverish colds of cold damp weather. The blood is poisoned with the elements that the closed pores of the skin should have eliminated, which occasions the fever; whilst the lungs often succumb to the increased duties they have to perform, and inflammatory affections supervene. Whatever the explanation, the fact is certain, and it is now well established that the best mode of preserving the respiratory organs from winter colds is to keep the pores of the skin open by the use of cold or tepid water, combined with friction; or, in other words, to keep the cutaneous excretions up to their normal standard.

Acting in accordance with this view, I make all my consumptive patients, whatever their condition, if they have the strength, use a sponge-bath at a temperature of from 62° to 68° daily, and with the greatest possible benefit. I neither have to contend with hæmorrhage or chills, nor with aggravation of the cough, but quite the contrary. The cold sponge-bath produces in nearly every instance a feeling of indescribable comfort and lowers the pulse. The contact of the cold

water may accelerate the expectoration of the muco-pus collected during the night in the bronchial tubes, but that never alarms when it is explained that such a result is naturally to be expected. I myself derived the greatest possible comfort and benefit from cold sponging in summer in the open air on the banks of a Scotch loch, the waters of which were at 60°, and that when I was very ill, pulse 100, and skin hot and feverish. This gave me a confidence I have never lost, and of which I have never had reason to repent.

The question of exercise is an important one, and one that requires discussion and elucidation. I would say at once that, from personal experience and observation, I believe it is a great mistake for consumptive patients to take much active exercise. Every winter I see some such patients walk themselves to death. They have been told by their medical attendants at home to take exercise, and they do so, thinking that what gave them an appetite and did them good when well will do so now they are ill; but they merely walk themselves into their graves. The disease from which they are suffering is one of debility. The strength of former days has gone out of the youth and of the man, although perhaps he knows it not. Or the strength he has is fictitious, unreal strength, the result of a febrile condition, of a state of morbid nervous excitement. So he walks up hill and down dale, loses his appetite, cannot eat, becomes "bilious," is dosed for liver, and the disease progresses rapidly. Every winter, towards January or February, some invalids consult me who have up to that time taken their case in their own hands, and have thus walked from breakfast to dinner, with the healthy, in order to gain strength. But they have lost it instead—have become paler and thinner; and when I see them, I find that they have lost ground, that the disease has gained upon them since they arrived in the autumn, and that they are decidedly worse—all from over-exercise.

The sound rule for a consumptive patient is to take passive exercise, not active; to ride in an open carriage; to be rowed in a boat; to sit and lie hours in the open air; to live with windows open, but never to incur great muscular exertion. The amount of vital power in such cases is small. If it is too freely expended in exercise, there is not enough left for normal digestion; food is imperfectly assimilated, nutrition is defective, and the disease progresses.

A singular, but explicable fact is, that during the existence of active disease, when tubercles are forming and softening, very often no lassitude is felt on exertion. But when the disease is arrested, and a curative process has been set up, extreme debility and lassitude may be experienced and complained of, lasting for months, or even years. I felt this lassitude for five years. The explanation is simple. As I have already stated, in active disease there may be a false, feverish strength, like that of the delirious patient whom it takes half a dozen men to hold. In the curative stage, the false strength is gone; the real condition of the patient comes to light, as it does with the delirious patient when the delirium is gone, and he can scarcely lift his hand from the bed.

The social and mental hygienic condition favourable to the treatment of consumption may be summed up in a few words. Rest, repose, the absence of the ordinary duties, cares, harass, and worries of life. To obtain these is difficult in the social medium in which the disease has appeared. Therefore, the duties and obligations of life should be surrendered for a time, if possible; modified, diminished, if not. Those, however, have the best chance of arresting the progress of disease who can escape from the social medium in which it appeared. To do this it is always necessary to make great sacrifices—sacrifices which many cannot make. But those who can must remember that the struggle is one, not merely for a higher or lower stage of health, but for life itself.

CHAPTER III.

CLIMATE.

IF, as I have assumed, the deposit of tubercle in the lungs is a disease of defective nutrition, itself the result of exhausted or lowered vitality, the debated question as to what climate is the most calculated to arrest and cure the disease, is easily answered.

Theoretically, or rather physiologically, a cool, dry, sunny, stimulating climate is the one most likely to rouse depressed vitality and health; not a warm, moist one. Practically, my own experience and that of many other observers shows that such is the case, that consumptive patients do best in a dry, cool, sunny region, and that they are rather damaged than improved by a warm moist climate.

This, the modern view, is certainly one of the most valuable contributions that modern science has made to the treatment of phthisis. And yet, although most true, I cannot say that it is a principle of treatment generally understood or practically carried out even in our own country, which is, I consider, much in advance of the Continent in the rational treatment of consumption. Indeed, abroad the hygienic and climate treatment of phthisis is still in its infancy, and nearly all the old errors are in full operation.

Thirty years ago, when pulmonary consumption was generally considered to have an affinity to inflammatory disease, and when undue importance was attached to the inflammatory conditions—bronchitis, local pleurisy, local pneumonia—

which characterize its later stages, it was quite natural that warm weather and warm climates should be considered desirable. In warm weather, as we have seen, when the skin and liver are acting vigorously in the work of blood purification, inflammatory affections of the lungs are neither common or severe, and are easily subdued. Was it extraordinary that a warm climate should be thought the one thing desirable in the treatment of a disease, the prominent outward symptoms and features of which are these very inflammatory affections? And yet the results obtained by the antiphlogistic mode of treatment, combined with warm air, were so little satisfactory that most, nearly all, the patients died, and the disease itself obtained the reputation of being all but incurable.

If, as I maintain, following in the wake of many sound pathologists of the present day, these inflammatory conditions are merely epiphenomena, symptoms of a disease itself the result of organic debility, of exhausted vitality, having nothing akin to inflammation, it is clear that warm weather cannot cure them. Indeed, it is much more likely to aggravate them by increasing the organic debility which is at the root of the evil, and by interfering with that active nutrition which alone can arrest their progress.

Practical experience proves that such is the case; not merely my own experience, but the experience of the medical profession in many different climes and regions. Perhaps the most valuable and conclusive evidence on this subject is that furnished by the English and French Army Reports during the last thirty years. From them it has been established that soldiers suffering under tuberculosis of the lungs get worse in all warm climates, especially during the summer—in the East and West Indies, at Malta, in Algeria, &c. Consumptive soldiers are now sent home to a temperate climate from all these colonies, as the best course that can be followed for their welfare.

I may here mention a valuable illustration of this fact, drawn from private experience. My old friend, Dr. Dundas, practised for twenty-three years at Bahia, in the Brazils, a tropical climate, leaving in 1843. Many years ago he told me that during his residence there he was constantly receiving patients from Europe affected with phthisis, sent there by the faculty as to one of the best climates that could be found for their disease, calculating on high temperature. These patients invariably got worse, and died much more rapidly than if they had remained at home. So fully did he become impressed with the conviction that the climate—a very healthy one in all respects apart from its tropical character—was deadly to the consumptive, that if any of his own patients among the European population were thus attacked, he instantly sent them home to Europe.

These facts are at once explained when we recognise the principle that pulmonary consumption is a disease of debility, of exhausted vitality, and not an inflammatory disease of the respiratory organs; that it is an affection in which the indication for treatment is to strengthen, to invigorate, not to soothe and calm “symptoms.” Warm weather produces languor, a disinclination to take exercise and to eat, often a positive disgust for meat and for fatty substances, and interferes with sound sleep. In warm weather the natural desire is to remain recumbent, idle, and half-dressed, to drink lemonade, and to eat ices. The attempt to take a fair amount of nitrogenous and carbonaceous food, from duty, is often followed by disturbed conditions of the liver, and of the digestive and intestinal organs generally, to which there is so great a tendency at all seasons in the consumptive. I only ask, in common sense, is such a state of things, is a temperature or a climate that produces such results, to be relied on in a case of debility?

A temperate, cool climate, on the contrary, with the thermometer varying between 55° to 65° Fahr. in the day, and between 45° to 55° in the night, has a diametrically different

physiological effect on the constitution. It braces and invigorates the system; it stimulates to exercise, improves the appetite, and admits of the ingestion and digestion of both meat and fats, so necessary for perfect nutrition. Thus it favours our attempts to rouse vitality by improving the nutritive functions.

The temperature which I describe, one ranging from 45° Fahr. at night to 65° in the daytime, is physiologically the most conducive to the well-being and longevity of the human race. The extremes of cold and the extremes of heat, on the contrary, are not conducive to longevity. In warm climates generations succeed each other more rapidly than in temperate ones. The inhabitants marry early, reproduce their race early, inherit property and arrive at positions of trust early, and die early, to make room for the next generation. This is the case in India, and in tropical countries in general. In temperate regions the span of life is longer; the succession of its phases is less rapid, less feverish. Thus Scotland, essentially a cool temperate climate, is also one of the healthiest countries in the world; the average duration of life being, I believe, above that of any country in Europe. It is certainly above that of England, itself superior to Continental Europe.

Having thus established the data by which we ought to be guided in the search of a climate calculated to assist in arresting and curing consumption, it remains to apply them. We may eliminate at once all tropical regions, all climates in which the mean annual temperature is high, above 60° , or where the winter mean is above 54° . It must be remembered that a high annual mean may be the result of extreme heat in summer, as at Malta, where the summer mean is 78° ; whereas the winter mean is 57° only. At Mentone the winter mean is 49° , with a summer mean of 73° . (See Table, p. 408, in my work "Winter in the South of Europe.")

Firstly, as to summer, there is perhaps no better climate in the

world for the consumptive than the British Isles. The nights are generally cool, and the days temperate, the thermometer seldom rising above 70° in the shade. Sometimes, however, it does ; we have “ dog days ” in England, days when the thermometer reaches 80° , or even ascends above. This degree of heat is very trying in England, much more so than on the Continent, on account of the generally moist state of the atmosphere. Owing to our insular position, and to the warm water of the Gulf stream impinging on our western shores, the atmosphere is generally loaded with moisture, and the sky partially covered with clouds even in summer. Warm moisture stops insensible perspiration, and is very oppressive and trying.

Generally speaking, this warm, oppressive weather is of short duration with us ; but there are exceptionally warm summers, in which the thermometer may remain for many weeks above 70° in the daytime. This weather, really tropical in the south of England, is most pernicious to the consumptive ; but they can easily escape from it by going north, to our northern counties, or to the Highlands of Scotland. The west coast of Scotland is proverbially moist ; but moisture with the thermometer between 55° and 65° , as it generally is in summer in the Western Highlands, does no harm whatever, neither causing cold or cough, nor increasing them if they already exist. A consumptive person, with a bad cough and free expectoration, provided he be warmly clothed and protected, may sit in a boat all day on a Scotch loch, exposed to frequent showers, in summer, with the thermometer at about 60° , without taking any harm. I have done so myself for weeks and months together, not only with immunity, but with the greatest possible benefit to the general health, and as a result, to bronchial suffering.

Continental Europe is by no means so suitable as a residence for mid summer, owing to the great heat which nearly every-

where prevails from June to September. The coasts of Brittany and Normandy, and those of Holland, however, share with the British Isles the milder climate which a canopy of vapour and cloud gives us, by protecting us from the direct rays of the sun. In central and southern Europe, and even in Switzerland, the only means of escaping great and pernicious heat is to ascend the mountains some four thousand feet. But in the higher regions there is a great drawback: the nights are often very cold in fine weather, through radiation, and in wet weather you may be in vapour and mist, in the clouds, for weeks together.

To find a temperate winter climate we must leave the British Isles, and descend south. Those who are suffering from phthisis or chronic disease of the respiratory organs, and can do so, thereby immeasurably increase their chances of recovery. For seven months in the year, from the middle of October to the middle of May, not only is the temperature too low in Great Britain, generally below 55° Fahr., but it is all but constantly moist. Cold moisture arrests the action of the skin, throws extra work on the lungs, and is a fruitful cause of cold, influenzas, bronchitis, pleurisy, and pneumonia. Moreover, these influences increase, aggravate the inflammatory complications, and sequelæ of phthisis. Indeed, a severe feverish cold, such as nearly all experience at least once in England during the winter season, may soften in a few days a great amount of tubercle, and create a large cavity. Thus, in the course of these few days, the consumptive patient may pass from the first to the third stage of the disease. Indeed, chronic bronchial affections, whether existing alone, or complicating phthisis or asthma, are all but constantly aggravated by our winter.

The confinement, also, to which persons suffering from these affections must be condemned during the many months of bad weather which characterize an English winter, saps at

the very root of constitutional improvement. After even a few days' confinement to the house the appetite, digestive power, and nutrition flag; and thus a barrier is raised to the amelioration of the general health, which alone can arrest the progress of the disease.

After devoting seven successive years to the study of the winter climate of the south of Europe, after much travelling and reflection, after a careful perusal of the writings of other authors on climate, I have come to the conclusion that the most favourable and accessible climate for chronic disease of the respiratory organs, and especially for phthisis, as also for all diseases characterized by organic debility, is the undercliff of southern Europe, or the coast ledge which forms the north shore of the Mediterranean from Cannes to Pisa.

For the various climatic and meteorological data on which this opinion is founded I must refer to the third edition of my work entitled, "Winter in the South of Europe," in which they are fully developed. I will only here state, that the winter climate in this region is exactly the one which would theoretically respond to the requirements of phthisis, as I have described that disease. It is cool, sunny, bracing, stimulating, and dry. During the invalid season, which may be said to extend from the 1st of November to the 1st of May, there are seldom more than about thirty days' rain. Thus, out of the one hundred and eighty-one days comprised in the six months named, about one hundred and fifty are generally days of brilliant sunshine—so dry, that the hours from breakfast to dinner may usually be passed with perfect safety by an invalid, lying on the ground on a cloak in the sunshine. During more than half the days of rain even the rain is only partial, and several hours of sunshine are enjoyed.

In such a climate, if the rules which I have laid down in my work for the guidance of invalids, in this to them unknown

region, are strictly adhered to, there is an energetic stimulus given to organic vitality, and if it is not too late, or altogether unattainable, the powers of the system are effectually roused. The appetite and digestion improve, assimilation and nutrition become more natural, the progress of disease is averted, and nature at once begins to repair existing mischief. In phthisis crude deposits of tubercle are often absorbed and reduced to their inorganic cretaceous elements, cavities cease to secrete muco-pus, and then contract and cicatrize. These are results which I witness every winter at Mentone, the most sheltered and favoured spot of the whole Riviera, in many cases, although of course by no means in all. In many the disease is too far advanced, or the organic taint or exhaustion is too profound for any stimulus—hygienic, climatic, or medicinal—to arrest the onward progress of the malady. The rapidity only of its progress is modified, and it terminates by death, as in the ordinary run of cases in which all these means of treatment are not, or cannot, be applied.

There are cities in the south of Europe, such as Naples, Rome, Pisa, Malaga, that have long enjoyed an exceptional reputation in the treatment of pulmonary consumption. I believe that the climate of all these southern cities is very inferior to that of any part of the Riviera, with the exception, perhaps, of that of Malaga; but they are all, without any exception, very inferior to any part of the Riviera on hygienic and health grounds. They are all dirty, unhealthy, southern cities, with a very high rate of mortality from the diseases which produce the same results in the worst parts of our worst cities.

I maintain that consumptive people should reside in the country or in the suburbs of healthy towns, in order to secure the most favourable hygienic conditions; these favourable conditions are not obtained by those who live in the centre of badly-drained unhealthy towns. On the Riviera, at Cannes,

Nice, Monaco, Mentone, St. Remo, the houses occupied by invalids are all suburban, in the country, with the sea in front and mountains behind.

The great winter sanitarium for consumptive invalids up to the present day has been Madeira. With all its charms and all its advantages, it does not appear to me to offer the conditions which are indispensable to rouse exhausted vitality. It seems rather to satisfy the requirements of the bygone period of the professional mind, when pulmonary consumption was considered a species of inflammatory disease, than to satisfy present requirements. For have I not repeatedly said that phthisis is now considered a disease of debility, of anæmia, of organic exhaustion, and of defective nutrition? According to the former view, a moist, mild atmosphere, a kind of natural orchid-house, would be just the place chosen. According to the latter, such a climate should rather be avoided, as calculated to depress vitality. The immunity from colds and inflammatory diseases of the respiratory organs which a mild, moist climate is calculated to afford, is purchased too dearly if it is gained by a loss of general tone, and by a diminution of appetite and nutritive power.

The most recent writer on Madeira, Dr. Stone, of the Brompton Consumptive Hospital, says, in the pages of the *Lancet* (December 2nd, 1865),—

“That the first effect of the climate of Madeira is peculiarly soothing. It is not until some months have elapsed that the balmy influences of equable temperature, and the soft breathing of moist, warm sea-breezes become absolutely cloying, and tend to enervate both mind and body. Some temperaments resist the approach of this *dolce far niente* longer than others; not a few, with well-meant efforts at resistance, pay by feverish attacks for unnecessary activity purposely indulged. . . . All local varieties, however, are subordinate to the dominant

character of the climate, which is warm, equable, and moist almost to saturation."

The slightest consideration must lead any physiologist to the conclusion, that although such a climate may be a very agreeable one, may be especially soothing to all who are suffering from chronic bronchial disease, idiopathic or symptomatic, it cannot rouse organic vitality as the more trying, cool, dry, sunny climate of the undercliff of the Riviera undoubtedly does.

Seven years ago, impelled by the spirit of self-preservation, imbued with the views respecting the nature of phthisis which I have propounded in this essay, and which I believe are the views of the more advanced members of the profession at home and abroad, I carefully analysed the claims of the various winter stations. I thought of Madeira long and seriously, but shrank from it on the above-mentioned grounds. Already well acquainted with the south of Europe as a traveller, I thither directed my steps as an invalid, and I believe that I found in the Genoese Riviera the region that corresponds with the medical ideas of the day; the latter being in advance of the medical ideas of former times, and in my opinion the expression of truth.

Dr. Stone, in the article I have quoted, thinks there is a fashion in these things, that formerly Madeira was the fashion, and that now the Riviera and Mentone are becoming the fashion. I believe that he is mistaken. Madeira was supported by the medical profession as long as it thought that such a climate answered its requirements, which were then moisture and warmth. Now that it does so no longer, that other views prevail, that a cool, bracing, tonifying climate is demanded, Madeira falls in professional estimation, and the Riviera rises.

I thus lay claim to having been, during the last seven years, as a result of my own break-down in health, once more a

medical pioneer. I have sought and found a locality suited to the present state of the professional mind abroad and at home. All that I have written and said would have fallen to the ground had I not met with a ready response in the tone of mind of my professional brethren, who, after all, alone direct public opinion in these questions.

CHAPTER IV.

THE MEDICINAL TREATMENT OF PHTHISIS.

I HAVE now reached the most difficult part of my subject, one that still affords great room for difference of opinion, even if the premises contained in the previous papers are admitted. It would be vain to endeavour to reconcile the conflicting views which reign in the profession respecting the therapeutics of phthisis, so I shall confine myself to a statement of the conclusions at which I have arrived from my own personal experience in practice.

As that experience has increased, I have gradually arrived at the conviction that there is no medicinal panacea for pulmonary tuberculosis, any more than for any other form of tuberculosis. There is no one remedy, in my opinion—no one drug that can act as an antidote to this morbid diathesis; neither cod-liver oil, nor iodine, nor iron, nor the preparations of phosphorus, nor any other pharmaceutical agent. Those who believe that there is such an antidote appear to me to ignore the very nature of the disease, not to be aware that it is merely the local evidence or symptom of exhausted vitality, of general vital decay, a mode of death, manifesting itself as the result of worn-out organic power.

Such a condition is not to be remedied by physic, but mainly by physiology, with physic as an adjuvant, a hand-maiden. It is only by removing all the causes that are depressing life, that are contrary to the healthy development of the functions of life, and by placing the sufferer in the most

favourable hygienic conditions for the development of his organization, that we can hope to arrest or cure such a disease. Here, again, horticulture has been of use to me. If a plant is failing because it is of a bad stock, or because it is placed in conditions of air, moisture, sun, shade, or soil, unfavourable to its habits and nature, it is not by adding this manure or that to the soil in which it grows, that it can be restored to health. All such efforts are vain. Its nature and habits must be studied, and then the conditions favourable to its healthy development in every respect must be adopted. Once this is done, a favourable change may take place, provided its vitality be not already too far depressed, or provided disease has not advanced too far to admit of recovery. At the same time, well-chosen manures, the addition of a necessary element deficient in the soil, may materially help the horticulturist.

So it is with phthisis, although no mere drug can give new life to a decaying organization, can arrest and cure a disease in itself a mere symptom of such decay, an enlightened use of medicinal agencies may do much to aid improved hygienic conditions, in rousing and restoring vitality, and in arresting the progress of disease. There are many stumbling-blocks in the path of consumptive invalids, many conditions of disordered functional activity, which render the most hygienic treatment nugatory, and which physic has the power to modify and remove. Such are disordered conditions of stomach, liver, and intestines; morbid states of innervation, cerebral and spinal; uterine, vesical, rectal complications, functional or local, all of which are more or less under the influence of medicine.

To meet these and other complications we have numerous and valuable medicinal agents at our call: mineral acids, alkalies, vegetable bitters, sedatives, narcotics, alteratives, astringents, all of which in turn do good service in the hands of the experienced physician. There are few stages or con-

ditions of the disease in which such a practitioner does not find an important indication, something to do medicinally, by which nature and hygiene may be assisted in their operations. I am a firm believer in physic, and seldom or ever leave my consumptive patients entirely to nature. I firmly believe that I can help them by the application of rational therapeutics, and try to do so. When myself a consumptive invalid, for many years I was always doing something in the way of medicinal treatment; and have the decided conviction, right or wrong, that I increased my chance of recovering by thus meeting the varying phases of my own case.

Having laid down on a broad basis the principles which should, in my opinion, regulate the treatment of phthisis, I have a few words to say on some of the therapeutical agents which stand highest in the professional mind, pre-eminent amongst which is cod-liver oil.

Professor Bennett, of Edinburgh, first introduced this agent to the profession in Great Britain, in a work written, *ex professo*, on the subject in 1841. He had found it extensively given in Germany; and in this work communicated to his countrymen the experience of his German friends, as also his own. A few years later, Dr. C. B. Williams, our most eminent and enlightened thoracic pathologist, gave cod-liver oil the sanction of his great experience. From that time its influence in favourably modifying nutrition, and in arresting tuberculosis in the lungs, has been universally acknowledged; so that now it has become the great remedy for consumption, and that most deservedly. Some of our American brethren state that, since its general use in phthisis, the mortality from the disease has sensibly diminished, and as a result, that the general death-rate is lower.

The question naturally presents itself, if cod-liver oil undoubtedly exercises a beneficial and even curative influence on pulmonary tuberculosis, why and how does it produce this

effect? Chemical analysis of fish-oil does not give a clue, for the amount of iodine and bromine discovered is so infinitesimal that we can hardly admit that theirs is the potent influence; especially when we find that, administered alone in these or even in larger doses, the therapeutical effect is not produced. To discover the clue we must fall back upon physiology.

It is now generally admitted by physiologists that fatty substances, if not absolutely essential to digestion and nutrition, exercise a most beneficial influence over these processes; indeed, nature appears to have placed fats within the reach of man all over the world, and to have implanted an instinctive craving for them in mankind. In northern climates, the natives consume largely fish-oils alone, or with their food; in temperate climates, butter and meat-fats take their place; while in sub-tropical regions vegetable oils, such as olive-oil, form an important element of the food. Even in the tropics there is the palm-oil, and gee, or butter, to satisfy the absolute want of fatty substances. From physiological requirements to those of the morbid condition of nutrition which constitutes tuberculosis there is only a step, which observation has made. It has been long remarked that in these morbid conditions of the human economy a larger amount of fatty nutritive elements than is usually required becomes a means of restoring nutrition to a more healthy state, and that these fatty elements become, positively, therapeutical agencies.

If this view of the action of cod-liver oil is the correct one, if in giving it we are merely ministering, in an exaggerated degree for therapeutical purposes, to a natural health requirement, any fatty substance would have the same result. Within certain limits I believe that such is the case—cream, fat meat, vegetable oils, bacon, butter, all answer the physiological condition, and I invariably give them, if possible, when the patient's stomach cannot bear the fish-oil. But I also believe with the rest of the profession, that the

fish-oil is the best, is the easiest digested and assimilated, and is the fat to which the stomach gets the soonest reconciled, and which it can take the longest. I myself took an ounce and a half a day for five years without intermission, at last with pleasure, and always with benefit to the digestive processes. A medical friend of mine, well known to the profession, who has, like myself, saved his life by the combined influence of hygiene, climate, and physic, could never take cod-liver oil; "but then," says he, "I took fabulous quantities of butter with my meals."

It is a known and admitted fact that the greater number of those who now recover from phthisis are persons who have taken cod-liver oil. This fact certainly redounds to the credit of the remedy, but it must be remembered that those only can take it in whom the digestive organs are in a sound condition naturally, or in whom they have been restored to a sound condition by proper medical treatment. Women in whom uterine disease sympathetically produces nausea and sickness, those who are suffering from chronic dyspepsia, or from chronic liver or kidney disease, generally speaking, cannot take the fish-oil; it nauseates them, makes them sick, and destroys their appetite, as often do all other fatty substances. Thus, the recovery of those who can, and do, take cod-liver oil may be not so much because they take it, as that their digestive system is sound, and that they can take and digest fat and plenty of good nourishing food besides. On the other hand, those who cannot take the oil, and die, may die not so much because they do not take the oil remedy as that their digestive system is bad, and cannot be restored to a healthy state, so as to admit of the food-cure.

The undoubted improvement of the majority of the consumptive patients who can take cod-liver oil or other fats, in health, in strength, and in condition, has received additional and most valuable explanation and confirmation from some recent in-

teresting physiological experiments. These experiments have been made during the last year by Dr. E. Smith, the Rev. Professor Haughton, Dr. Frankland, and Professors Fick and Wislicenus, of Zurich, with a view to arrive at a clearer notion than we had before respecting the origin of the power shown or spent by animated beings. They have been carried on under the influence of modern views respecting the correllation of physical forces, and the doctrine of the conservation of force and of the equivalency of heat and mechanical force. The generally received physiological idea of nutrition is, that nitrogenous or albuminous food, by the process of assimilation, is transformed into muscle and force; whereas carbonaceous, fatty, amylaceous food, is burnt, and generates animal heat. The experimentalists whom I have quoted appear to have satisfactorily established that the production of the muscular power spent by animals and man is not so much to be attributed to the assimilation of nitrogenous food as to the slow combustion of carbonaceous food. According to this theory, the formation of animal heat by the combustion of carbon is attended with the development of "force," of which the muscles may possibly be only the instruments, not the producers.

This view may be familiarly explained by the steam-engine; the latter, in burning coal, does not only produce heat, but power, the power that drags the train along. In a more obscure, but equally evident manner, the slow combustion of food in the processes of nutrition is attended with the development not only of heat, but of power, force. If the above views are correct it would follow, singular as the statement appears, that more power or strength is to be got out of fat than out of meat or muscular tissue; and this really seems to be the case. Tyrolese chamois hunters find that they can endure greater fatigue on beef-fat than on the same weight of lean meat; and accordingly, when about to absent themselves for several days

in the mountains, they take beef-fat with them instead of meat. (See *Intellectual Observer*, July, 1866.)

Thus is explained the craving of mankind for fatty food, and for carbonaceous food generally. Thus is illustrated the generally acknowledged physiological principle, that man is omnivorous, and is also explained the strength of the rice-eating Hindoo, and of the potatoe-eating Irishman. A rational dietary is evidently the one in which nitrogenous and carbonaceous food are mingled in due proportion.

Lastly, we may safely conclude that fats are not "bilious," bile producers, as popularly believed, but that the inability to digest them is merely an evidence of defective, or of weak and easily disturbed digestive powers. The great majority of those whose digestive system is in good order digest fats with the greatest ease, and that in large quantities. The dislike so often shown to fat by persons in good health is often merely a result of education—of mothers most foolishly and erroneously picking out the fat from their children's food in early life "as unwholesome and bilious."

Iodine has a great reputation in the treatment of other forms of tuberculosis, and especially scrofula, which may be said to be almost the same disease. I presume this reputation is a deserved one; but, as iodine is always administered conjointly with a generous dietary, and with persevering hygienic treatment, it is very difficult to form an estimate as to its real value. In pulmonary phthisis it certainly does not appear to me to exercise much influence; and as it is apt to disorder the stomach and to interfere with the appetite, I now seldom give it internally. I constantly, however, use it externally, over the diseased regions of the lungs, as a counter-irritant, and to promote absorption of adhesions.

Once it is admitted that the treatment of phthisis ought to be sthenic, invigorating,—not antiphlogistic or debilitating—iron and its preparations naturally present themselves to the

mind. I have often administered them, and I believe with benefit, in the stage of convalescence or retrogression, when tubercle is no longer deposited, but in process of absorption or cretification and when the period of debility and lassitude supervenes. I have also given them during the acute stage, but I think without beneficial result. Indeed, at that stage they appear to me, like iodine, often to disorder the stomach, and to interfere with the appetite and digestion. When I observe this under any medication, I at once stop the remedy, firmly believing that food is of more value than physic if the choice is between the two. It is a remarkable fact, that no physicians writing on chalybeate or iron waters recommend them for active phthisis; indeed, the opinion that they are not only useless but dangerous appears to prevail.

Preparations of phosphorus, and especially the hypophosphites of soda and lime, were introduced by Dr. Churchill some ten or twelve years ago as a positive remedy for pulmonary phthisis. This is still Dr. Churchill's belief; and I, who have known him from early life, am convinced that he is sincere—that he really believes that he has found an antidote, a remedy for pulmonary consumption. The subject has of course much occupied my thoughts, and during the last seven years I have administered the drug to a large proportion of those whom I have attended.

Were I only to quote the successful cases that I have had under my care, the cases in which the tubercular disease has been arrested and even cured, I could furnish Dr. Churchill with many instances of cure, myself included, which have apparently taken place under the influence of the hypophosphites, as they were long and constantly administered. But, on the other hand, I have quite as many, perhaps more, cases of death to narrate in patients whose condition admitted of recovery from the extent of the disease, and who perseveringly took the hypophosphites from the beginning to the end.

Were the preparations of phosphorus given really an antidote to the disease, and the cause of the recovery in the first class of cases, they ought also to have cured many of the latter, for they were all placed under the same hygienic and social conditions. The scrutiny and comparison of these cases of success and non-success, however, have left in my mind the conviction that the different results obtained are to be explained by considerations of general pathology, by the type of the disease, the constitution of the patient, the conditions under which it was generated, and that the patients were not taking a remedy that had the power to control antecedents and conditions unfavourable to recovery. It is worthy also of remark, that I have always administered either Dr. Churchill's own preparations, or salts furnished by his own manufacturer, so that there is a certainty as to the genuineness of the drugs used.

Although not admitting that phosphorus and its preparations are an antidote to pulmonary phthisis, for I have seen too many cases of failure to be able to admit it, I believe that they constitute a valuable medicine in asthenic disease, and especially in tuberculosis. Their administration, also, is quite rational physiologically, and I may say also agriculturally. Phosphate of lime is one of the principal elements of our economy. It forms the bones, and is found in our tissues, and especially in the brain and nervous tissues. It is sound physiology and pathology to give freely to the animal system as food, or as physic, the elements of which that system is composed. If it is right to do so in health, it is equally right in disease. In tuberculosis observation shows that it is judicious to increase the usual amount of fat given in the system, and my observation seems to show me that it is equally right to increase the amount of phosphates. Phosphorus is only contained in limited amount in our food, although it exists in so large a proportion in our system. Its administration in a

disease of debility may, in my opinion, be compared to manuring an exhausted field. If corn is grown several years in succession in the same soil, the crop at last fails for want of phosphate of lime, which is necessary to form the grain. Add bone-dust or phosphate of lime and the corn comes up vigorously, and the grain forms healthily and well. It is in this sense that I give the preparations of phosphorus, and that I myself took them for five years.

The above views must have gained greater credence and weight with the profession than is generally admitted, for I am seldom consulted by a new patient at Mentone, each successive winter, without finding that he or she has been taking phosphorus in some shape or other, and that when the prescriptions are signed by the heads of the profession. Indeed, although I do not think Dr. Churchill is warranted in claiming for phosphorus the position which he gives it as a "remedy" for pulmonary consumption, I consider that the thanks of the profession are due to him for directing our attention to a valuable therapeutic agent in this dread disease.

In a sthenic, or strengthening treatment such as I describe, in the curable stage of the disease opiates can have but little place. What availeth it to allay irritation, to quieten cough, and procure sleep, if thereby the appetite for food is destroyed, as is usually the case when opiate cough medicines are given? Is it not better that the patient should have a moderate amount of distress and discomfort and eat, if eating is life and fasting death? In the latter stages of disease, when all hope of recovery is gone, and it is merely a question of soothing the last stage of life, then opiates become an inestimable blessing in judicious hands. There are, however, other sedatives—prussic acid, hyoscyamus, belladonna, conium—from which much ease may be obtained in the earlier stage of the disease when there is still hope of recovery.

As to expectorants I cannot say that I have much faith or

reliance in them. If muco-pus is abundantly secreted, it is better away, and nature expels it by the natural and then easy process of coughing. When secretion diminishes, as it does as the disease diminishes, and the patient coughs spasmodically to get rid of a sticky tenacious secretion, which causes tickling and irritation, I do not see what good is done by loosening it, as the term is, by squills, even if they have the power to loosen it, which I doubt. The real remedy is an effort of strong will on the part of the patient to repress coughing until the natural action of the bronchial villi has pushed the muco-pus into the larynx, whence it can easily be expelled. My attention was first drawn by Professor Bennett to the fact that the dry irritating cough for which expectorants are generally ordered, is often merely the result of positive improvement, and is best met by emollients and moral restraint.

The local inflammations of pulmonary tissue around softening tubercles, the local pleurisies which are the result of tubercular deposits reaching the surface of the lung, are no doubt benefited by counter-irritation—by painting the chest with caustic-iodine, by croton-oil liniments, by small blisters; but I question whether much good is done by issues. Indeed, I think the pain and annoyance they occasion often counter-balance all the good done, and that the remedy is out of all measure with the benefit obtainable by its employment. The inflammation can only be radically cured by the natural subsidence of the causes of internal irritation, which the counter-irritation of the issue does not in the least control.

A volume might be written on the treatment of phthisis according to these views; but I purpose limiting myself to the above brief general exposition, leaving my readers to fill it up themselves. I have now only to devote a few pages to the consideration of the “results of treatment,” and I shall have then accomplished my self-imposed task.

CHAPTER V.

THE RESULTS OF MODERN TREATMENT.—PROGNOSIS.

Acute Phthisis—General Phthisis—Chronic Phthisis—Phthisis among the Rich—Phthisis with Complications—Scrofulous Phthisis—Localized Phthisis—Phthisis of the Aged—Gouty Phthisis—Phthisis among the Poor.

HAVING in the preceding chapters briefly analysed the nature of pulmonary tuberculosis, and described its treatment by hygiene, climate, and medicine, I am desirous, in conclusion, to say a few words on the results obtainable, in accordance with my experience, by the employment of these means.

As I have already stated, by combining the various agencies which I have described, and which constitute what I have termed the modern treatment of phthisis, many patients may be and are saved; but many still die, and must ever die. The question that I now purpose investigating, as far as possible, is: who are those who may live, and who are those whom all the resources of our art are unable to rescue from death? The answer to this question can only be approximated by referring to the laws of general pathology, by analysing the type of the disease, the circumstances under which it was generated, its stage of development when discovered and first treated, and its complications.

All diseases are greatly modified in their symptoms and progress, as also in the results of the treatment to which they are subjected, by the form or type which they assume from their first development, and none more so than pulmonary consumption. This disease may be acute or chronic.

In the acute type phthisis may run through all its stages in

a few weeks or a few months. I have known patients seized with a series of febrile symptoms, having all the appearance of typhoid fever, and die in four or five weeks. On a post-mortem examination the lungs have been found full of miliary tubercles. No treatment has or can have any influence whatever on the termination of such a case; the patient is destined to die from the first day. In other equally fatal cases of acute phthisis, although the disease does not assume the form of a continued fever, and occupies several months, instead of several weeks, in passing through its successive stages, there is no lull whatever, no interval of arrest. The lung tissue is progressively invaded by tubercular exudation, which rapidly softens, so that both lungs soon become a mass of advanced disease, and the patient dies without the disease having experienced any remission. What can medical science, climate, or hygiene do in such cases? Most surely is such disease a mere mode of dying. Indeed, it is a question whether the most active and judicious treatment much retards the fatal issue.

Acute phthisis is much more frequently seen in youth than in middle or advanced age. The disease participates in the vigour and energy of the vital functions in early life. I consider it to be the evidence of a profound and final decay of vital power; so profound that there is no effort whatever made by the economy to contend with the evil that attacks it. The cause of acute phthisis must be sought for in the exaggeration of all the causes, hereditary and social, that produce the disease, and perhaps in their concentration in the same individual. Thus, I have repeatedly witnessed it in persons who, with the hereditary predisposition or taint, have been exposed to extremely unfavourable hygienic conditions—town life, bad and scanty food, contaminated atmosphere, and great sorrows and cares.

Next in gravity to acute phthisis is the type of the disease in which the tubercular formation takes place, not in isolated patches, but all over both lungs simultaneously, at the apex,

in the centre, and at the base. If the patient dies from other disease in the early stage of this form of phthisis, the lung is found studded with crude tubercles in its entire extent. When they soften simultaneously, as they often do, the secondary bronchitis is generally severe, and the constitutional symptoms are very marked.

There are many degrees of intensity in this type of the disease; but the more the case recedes from tubercular development localized at the apex,—the favourable type for treatment,—the more serious is the prognosis.

When phthisis assumes the chronic type, as is generally the case (most fortunately), an unfavourable form for treatment is that in which the disease shows itself in the midst of very favourable hygienic and social conditions. If a poor sempstress, half starved, made to work eighteen hours out of the twenty-four in a polluted atmosphere, living in a state of constant mental depression, becomes consumptive, common sense tells us that the disease may have manifested itself from the action of removable causes. If she can be placed under more satisfactory hygienic and social influences, she may therefore, and often does, recover. But if, on the contrary, the disease appears in one who has been bred and nurtured in the lap of luxury—who has known no hardship, no privation, no sorrow—of course the prognosis is more unfavourable.

It must be more difficult to arrest the progress of disease in such cases, for probably the cause is some strong hereditary predisposition, some defect originating with the progenitors, or some defective condition of individual innate vitality. It is in such cases, more especially, that everything should be done that is humanly feasible to arrest the disease, that no agency should be left untried that can possibly rouse the vitality of the patient. It is in such cases that he or she should be at once removed from the social medium in which the malady has been generated, in the hope of counteracting some unknown,

unrecognised, and yet powerful home antagonistic influence. A change of climate is of inestimable value with these patients ; indeed, it may be the only chance of arrest or recovery. Everything that is done, likewise, should be done from the very first ; no time should be lost, for the foe is a most formidable one from the onset of the attack.

A class of cases still more inamenable to curative treatment is that in which there are serious complications present. Phthisis not unfrequently comes on in persons advancing in age, between thirty and sixty, who have led a hard life—who have taken large quantities of stimulants, and have exhausted perhaps an originally good constitution by excesses of various kinds. With them the stomach is generally out of order, the liver is often diseased, and sometimes the kidneys. What can treatment do in such cases ? The disease may be considered a general break-up of the constitution, and the most judicious and persevering treatment seldom does more than retard the fatal termination.

Again, phthisis may attack at puberty those who during childhood have suffered from scrofula. This is a grievous and serious complication, but by no means so unpromising as those just described. Tuberculosis, or tubercular exudation, affects different organs at different periods of life. In infancy and early childhood it more especially attacks the meninges and the mesentery. In childhood and until puberty it attacks, in preference, the glandular structures of the neck, the extremities of the long bones, and the spongy tissue of the bones in general, giving rise to the diseases of the articulations and bones which characterize scrofula. In early life, during my Paris career, I had charge for two years of a scrofulous ward of eighty young females, from fifteen to twenty years of age, in the hospital of St. Louis. They had nearly all glandular swellings, with or without scrofulous disease of the bones, ankles, knees, elbows, and a sad assemblage these poor girls were.

On several occasions I carefully examined the lungs of all my young patients, for I was publishing the clinical lectures of my master, the celebrated Dr. Lugol, and was much interested in everything connected with the pathology of scrofula. He wished to establish the connexion between scrofula and pulmonary consumption, and I found the evidence of localized tubercular deposits in the lungs of many of these scrofulous girls. The tubercular lung deposits were met with more especially among the elder ones, and that often although the patient presented little or no evidence of their presence. Dr. Lugol told me that he had long found this to be the case with his young scrofulous patients. When death, through accidental disease, afforded an opportunity for post-mortem investigation, the development of tubercles in the lungs of scrofulous youths was much more frequently observed in those who were arriving or had arrived at puberty than in those who were younger. Such tubercular exudations often remain crude and dormant for years, but when they assume a more rapid development and soften, the previous existence of scrofulous disease stamps the case as serious, although not necessarily as fatal. In these patients phthisis seems to appear, in its progressive form, as a species of climax to the antecedent tubercular or scrofulous affections. The crude tubercles which co-exist with scrofulous disease in the young, in the latent form, are no doubt often present without giving rise to any symptom, and they may be subsequently absorbed and the patient may recover without their presence having been even suspected.

The more favourable type of phthisis, that in which rational treatment is the most likely to arrest the progress of the disease, and even to effect a cure, is that which may be termed accidental phthisis, in a chronic form, localized to the upper regions of the lungs. In this type of the malady there is no very decided hereditary taint, the patient is not born of very aged or very sickly parents, and does not

present very serious complications in other organs, the evidence of a thorough and irremediable break up of constitution. Again, the disease generally manifests itself under unfavourable hygienic conditions, under the influence of overwork, sedentary town life, or harass, care, and anxiety. Sometimes in the most apparently luxurious and easy-going life some of these influences may be at work, so that appearances must not always be trusted. The habits and general life of persons moving in the highest circles, and having within their grasp every comfort, may be unhygienic. Moreover, they may be a prey, like humbler mortals, to cruel cares, none the less felt for not being recognised. Their nights may be sleepless, their days without joy; disappointed affections—social ties—or ambition may deprave digestion, and pave the way to the inroads of disease. In all such cases we may reasonably hope that the old saying, “*sublatâ causâ, attolitur effectus*,” may be verified. If we can remove *all* the causes that are depressing vitality, and the disease is in an early stage of its development, we may hope firstly to arrest its progress, and secondly to effect a cure, and that at any period of life short of extreme old age.

Pulmonary phthisis in extreme old age—not so rare an affection as is generally supposed—appears to me an all but incurable form of the disease, a mere mode of dying. I saw a number of cases of this form of consumption in the year 1840, when in medical charge of the infirmary of the Salpêtrière Hospital, Paris. This infirmary is fed by a population of three thousand five hundred old infirm women, between sixty-five and a hundred, all living within the walls of this magnificent institution. The disease assumes the form of chronic bronchitis, but is characterized, besides the stethoscopic and percussion symptoms, by a most unearthly degree of emaciation. In no other disease have I seen patients live in such a ghastly state of emaciation. They become at last

like living mummies—nothing, literally, but skin, bone, and “concealed” organs.

There is a form of phthisis, of which I have seen a good many examples, although it is not generally described. It may be termed gouty phthisis, and the prognosis, I consider, is rather favourable than otherwise, especially in its early stage. Consumption and gout are considered by many physicians to be antagonistic, but experience has proved to me that such is not the case, and the discrepancy between the theoretical and the practical view admits, I think, of easy explanation.

Gout develops itself, primarily, in persons of healthy, robust constitution, who live generously. Their digestive system being good enables them to take and assimilate a considerable amount of nitrogenized food, and of stimulants, which appear to be the cause of gout developing itself. These people—the primarily gouty—do not become consumptive, for their vitality is high and antagonistic to a disease of debility.

But when such robust gouty people, who have themselves developed gout in their organization by a luxurious existence, marry late in life, as they often do, and have children, they do not generate healthy, robust children like themselves. Their children are often delicate, without being positively unhealthy; they have weak digestions, and suffer all their life from what may be termed gouty dyspepsia. If their organization is not much tried they get through life very well, and may reach old age, even when suffering more or less from low forms of gout. If, on the contrary, they are much tried, body or mind—if they are placed for a continuance under unfavourable hygienic conditions, they fall below par, are liable to suffer from inflammatory affections of the aerial passages, which become chronic from lowness of general tone, and the deposit of pulmonary tubercle may follow. As I have stated, I do not think this form of phthisis an unfavourable one for treatment, for the constitution received from the parents is

often originally a good one, merely weak and tainted with the low type of gout. There is often great latent vitality to work upon. My own case is one of this kind.

An all-important element in estimating the probable result of treatment—in forming a prognosis, in a word—is the extent of lung diseased when the patient is fairly brought under rational treatment. I often familiarly compare the lung attacked with tuberculosis to a large house on fire. The fire may begin in the servants' rooms or garrets—that is, at the top of the lung, the most frequent original seat of tubercular deposit. If it can be put out before it has extended to the story below, but little inconvenience is afterwards experienced by the owner of the house. He can live very comfortably in it under ordinary circumstances, only feeling that there is “less room” than formerly on extra occasions, such as visits from friends. If the story below, or the two stories below, are destroyed before the fire is put out, he feels more or less inconvenience in his “daily” life, but still he can get on. But when all the house is destroyed except one room, or the cellars, it becomes quite impossible for him to live in it by any amount of contrivance. Moreover, it is all but impossible to save even that one room, when the fire has reached this point.

So it is with the lungs, which are not renewed, restored, when once destroyed; for we do not renew our organs as lobsters are said to renew their lost claws. Once a portion of the lung is destroyed, it is destroyed for ever, and its functions must be carried on by the healthy remainder. The only limit to curability, therefore, in my opinion, is the fact of there remaining a sufficient portion of healthy lung to carry on the functions of hæmatosis once the progress of the disease is arrested. The amount of healthy lung-tissue compatible with life evidently varies in different individuals according to their vitality. One lives long on a bit of healthy lung no larger

than a small apple ; another dies with even less than that in a state of disease.

The first and all-important point, therefore, is to arrest the progress of the disease, as it also is to arrest the fire in the house. Unless that can be done, in the one and the other case, the entire tenement will be destroyed, more or less rapidly. The living in the damaged tenement afterwards is a matter of adaptation ; and it is wonderful what either nature or man can and will do to adapt themselves to altered circumstances. We must also bear in mind that the more the fire or the disease has progressed, when it is first discovered, the more difficult it always is to arrest it.

When by the combined influence of hygiene, climate, and medicine the progress of phthisis has been arrested, crude tubercles have been absorbed or reduced to their mineral constituents, and cavities have been entirely, or all but entirely cicatrized, it must not be supposed that the patient is well and safe. The recovery generally, always indeed, takes place through improved nutrition, and often the convalescent consumptive patient is fat and rosy, and looks healthy and well. But these looks are deceptive, the result of a life passed under the most hygienic circumstances possible, in unnatural quiet and repose. At the bottom there is still the tubercular cachexia, which reveals itself by a want of power, by lassitude, and even prostration, if the habits of invalidism are abandoned, and the sufferer once more quits the shores of the stream of life for the rapid current.

Consumptive convalescents should consider themselves invalids for years, and it is only by doing so that they can hope really to regain a firm footing in life. They may aptly compare themselves to a railway truck, "warranted to carry six tons," which, after having been smashed, and then mended, painted, and varnished, looks as good as new, but is not so. It may carry two or three, or even four tons safely,

but no longer the original six, under penalty of a final catastrophe.

Those who cannot, or will not, thus consider themselves invalids, despite the outer appearance of health, relapse, and then all but invariably die miserably, for nothing saves them. I have now seen many such instances. One or two winters passed in the south, and rational treatment, arrest the disease, and bring with the improvement, delusive confidence. The patient either cannot, or will not, listen to advice, and goes out again to fight "the battle of life," but only to relapse, and to return to the south in a hopeless state.

What proves that even in those in whom the progress of pulmonary tuberculosis is arrested, tubercular cachexia, or defective vital power, long remains, is the frequency with which cachectic disease of another type subsequently attacks other organs. Thus last winter (1865-6) I lost at Mentone four patients from Bright's disease, all cases of arrested consumption. In one case consumption had been arrested for ten years, in another, six, in a third, two, in the fourth, one. They all four died with all but complete lung quiescence; serous infiltration gradually rising until it reached the lungs, and then extinguishing life.

A year or two ago, some of the Parisian friends and companions of my younger days, now men of mature experience, and occupying the most prominent positions in the Parisian medical world, gave me a dinner as I passed through Paris on my way south. After we had dined, my case was talked over, and one after the other gave the results of his experience of the treatment of phthisis. All believed in its curability; all could quote cases of arrest and cure in their practice; but one and all stated that many of these cases of arrested consumption had subsequently died of some other form of cachectic disease, and principally from albuminuria, like my four patients of last winter.

Thus, perseverance and energy are long required, not only during the course of treatment but for years after, if a thorough recovery is to be made, or even if a prolongation of enjoyable life is to be secured. This is really one of the most trying features of the disease, even when successfully treated. If we succeed in escaping death we must accept invalidism for a long period, perhaps for the remainder of our lives. I would remark, however, that this applies more to the middle-aged who recover from phthisis than to the young. The latter have such an amount of organic activity about them, the characteristic of early life, that if they recover completely they may, with care, and by leading a hygienic life, regain a firm hold on life.

To secure this result I often advise my young male convalescent patients to abandon, if possible, sedentary pursuits, and to turn their thoughts to out-door occupations. Our Australian and South African colonies offer valuable fields for such persons. Life in the bush, among cattle and trees, in a dry climate like those I mention, is certainly more favourable to the prolongation of life in a tubercular convalescent patient than a city counting-house. Had I myself been a younger man, I should have adopted this course. As it is, I have come as near to it as possible by becoming an "amateur horticulturist."

Foolish people have scarcely a chance of recovery—they must perish. They generally do everything that is wrong and pernicious to please their own passing whims and fancies, and often look upon the friendly physician, who tries to rescue them from death, as one to be deceived and deluded. I repeat it, such unfortunate people have scarcely a chance of recovery. They have neither the sense to follow the right course when it is pointed out to them or to grasp the hand of fellowship and sympathy when it is held out; nor will they sacrifice pleasure, money, or ambition to the pursuit of life. Indeed, I consider a weak, vacillating, peevish tone of mind, or an inordinate

appreciation of, and clinging to, the enjoyments and possessions of life, to be as unfavourable an element of prognosis as any of those already discussed. Such mental conditions all but certainly preclude recovery, however favourable the case may otherwise be.

When I reflect on the convictions that have gradually gained ground in my mind respecting the treatment of phthisis—convictions embodied in the preceding pages—I am often saddened by the thought, How are the poor to struggle successfully with such a disease? If rest from weary labours, if protection from atmospheric vicissitudes, if ample, nay, a luxurious dietary, if expensive medicines, such as cod-liver oil, if change of climate, to escape winter cold and wet, are necessary, how can those who live by their daily labour—and even many above them in social rank—hope to escape from the grasp of this fell disease? Is not the battle itself for them a hopeless one?

To these questions I would answer, that although the struggle for life cannot, most assuredly, be made with the same chance of success by the poor as by those whose position enables them to do all that is calculated to arrest disease, yet their case is by no means a hopeless one. The means of treatment that I have recommended—hygiene, climate, medicine—may be attended to at home, in our own country, in the midst of the duties and occupations of life, although in a minor degree. I have met with cases of arrested and cured phthisis in persons who have never left England, and who have never given up their social pursuits, and so have other physicians. Some of the most satisfactory and conclusive cases given in Professor Bennett's valuable work "On Pulmonary Consumption," are cases of this description.

To attain this end, however, nothing should be neglected. Unhygienic, unhealthy occupation should be given up; all the rules of hygiene to which I have alluded should be scrupu-

lously followed ; out-door occupations substituted for in-door during the summer months, if possible ; and, more especially, town should be abandoned for the country as a residence, whenever feasible.

Cities exercise a mysterious attraction over the lower as well as the higher classes of mankind. It must be the feverish excitement of city life, the hope of greater social advancement—for the greater portion of the lower classes in cities live as hard or harder lives than they would if similarly engaged in the country. No doubt the vitiated air breathed in cities, in the close crowded workshops, and in the closer and still more crowded sleeping-rooms, gradually weakens the constitutional powers, and constitutes the principal predisposing cause of phthisis. The poor should return to their native villages, if by any means feasible, even if there they have to accept a lowlier position than that which they have attained. The younger members of the family, when attacked with phthisis, should be sent to board or work with country relatives. The country air would do them more good than all the physic they can get from hospitals and dispensaries in town, and give them a better chance of recovery.

Indeed, it has often struck me that the funds of our city charitable institutions would be best employed by boarding their consumptive patients in farm-houses and agricultural villages, than in maintaining them in the wards of a city hospital. Or the hospital itself might be placed on some heathy, pine-covered moor, like the Convalescent Hospital at Walton-on-Thames ; and out-patients only seen in town.

It must be well understood that I am now speaking only of *curative* treatment. If all hope of recovery has been abandoned, if the lungs are all but destroyed, and the disease cannot be arrested—if an asylum to die in is all that is required—then it is of but little avail to drive the poor patient into the country, away from home ties and home assistance.

Then, when the last scene is at hand, any asylum will do to die in—the small home, with dear friends around, the city hospital, the workhouse infirmary.

The recent researches regarding nutrition, to which I have elsewhere alluded, are consolatory as regards the poor. As long as we believed that, in the scheme of nutrition, meat meant muscle and strength, fats and cereals heat only, the poor at home seemed to have but a slight chance of recovery in asthenic diseases, diseases of debility. With meat nearly a shilling a pound, how can they obtain ten shillings' worth each week; and if it is indispensable, how are they to get well without? But if, as is now stated—and, I believe, with truth—meat is principally a muscle repairer, and the force created is in reality principally obtained out of the carbonaceous food, fats and amylaceous substances, the chance of the poor is infinitely greater when "force" has to be regained. Oatmeal or any cereal with milk and oil or fat will, in that case, do as well as butcher's meat, and a few shillings a week will go as far as ten.

I have certainly, throughout my professional career, remarked, as already observed, that meat-fed children, and great meat eaters, are not stronger than other people. With children, indeed, I believe it is the reverse. The children whom I have attended, who have lived on meat, eating it three times a day—certainly not by my advice,—have not proved as strong nor as healthy as those who have lived on a more mixed dietary. Compare these town-fed children, who eat from ten to twenty shillings' worth of meat every week, with the Irish or Scotch peasant children, fed all but entirely on potatoes and milk, or oatmeal and milk. These researches also explain the disastrous effects which have, in many instances, resulted from the very nitrogenous or animalized dietary recently vaunted as a remedy for obesity.

Of course, I am well aware that the advice I now give can

only be partially followed, that there ever will be persons affected with phthisis in all classes of society, by whom it must be accepted as the decree of Providence, and who must struggle with it *in situ*. But even in such cases, in the earlier stages of the disease, a curative treatment may be attempted by all, even those whose means are small, or who depend on their daily labour for their bread. In more advanced disease, likewise, a lull may be taken advantage of to make the attempt. Pulmonary consumption does not usually progress steadily, uninterruptedly; its very nature is, on the contrary, to advance *per saltum*, by jerks, as it were. When not treated, it generally remains stationary for a time; then progresses, then again remains stationary, to again progress. We may take advantage of these lulls, which represent nature's own unaided efforts to limit and control the morbid action, in order to further hygienic treatment.

Following out this train of argument, I advise the young clerk, if able, as soon as a lull takes place, or is obtained by treatment, to give up sedentary pursuits, and turn farmer at home, in Australia, New Zealand, or the Cape. I advise the young artizan to abandon the town, and to follow his calling in the country. I advise the town maid-servant, or sempstress, to leave the city, and to find service or work in some country place. Nearly all have country friends, who will help them in their efforts.

There was a time when, like my neighbours, in such cases, among the poor, I prescribed tonics, cod-liver oil, and a generous dietary, and thought my duty performed. Now I have learned better; I have learned to place but little confidence in the curative value of mere medicinal treatment, pursued for a time, then abandoned. If the patients, whatever their class of life, remain exposed to the influences under which the disease is generated, their fate is generally sealed, whatever the treatment. Now, therefore, I try in such cases to encourage them

to make the family and social sacrifices which a more radical treatment of their disease entails. Family and social ties are as strong with the poor as with the rich ; and the tendency is even stronger with them than with the better educated, to demand from the physician a remedy which is to cure their complaint without any change or sacrifice on their part. As I have repeatedly said in the course of this essay, no such remedy exists for pulmonary consumption, nor is it probable that it will ever be discovered.

The various cures for pulmonary consumption that are constantly brought forward are founded on entire ignorance of the laws of general pathology. Those who are acquainted with these laws know well how utterly impossible it is for any one of the remedies proposed, for the inhalation of any medicinal substance, or of any amount of compressed air, or for any degree of forced inspiration, to cure a disease such as I have described, one of defective lowered vitality.

Nothing but an appeal to the laws that regulate the preservation and development of life can have that result. An intelligent application of those laws, as demonstrated by physiology, with the assistance of climate and rational therapeutics, may, however, be made most unquestionably the means of saving very many lives. As I have stated in my work on Climate ("Winter in the South of Europe," third edition), I am now surrounded, both at home and abroad, by a little centre of friends and patients whose lives have been saved, like my own, by the steady application of these principles.

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LONDON :
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